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of the former is typically foliaceous, dorsiventral in structure, and the apothecia are affixed to the surface or near the margin of the lobes and provided with a dentate excipular margin. In *Alectoria Californica* the thallus is cylindrical, radial in structure, the apothecia lateral with a commonly entire and smooth margin. In the view here taken of the species *Cetraria Californica* Tuck. is as yet undescribed and only represented in any mode of publication by such examples as have been issued by Miss Cummings and Dr. Zahlbruckner. The sub-nomen *sepincola* may well be dropped.

Rockland, Maine.

A PLEA FOR MORE AND BETTER LOCAL WORK.

ELIZABETH G. BRITTON.

Read by title at the meeting of the Sullivant Moss Society, Boston, Dec. 30, 1909.

This is not meant to disparage any of the work on mosses that has been done in America or that is now being done by various students in different states; but is rather the natural desire of one who day after day, and year after year, is shut up in the house with the mosses, after they are torn from their natural surroundings, all breath of the woodlands gone, and many times all records as to seasons, habitat, date, place, conditions, etc. Sometimes even the name of the collector gone as well. It is from nearly thirty years of study and experience that I say, that no group of flowering plants will better repay ecological and biological study than the mosses.

The most common species are often the ones least understood, or if they have been understood, their records are lost, and only a list of synonyms, sometimes a page in length (See Paris Index p. 339-340, vol. 1, second edition,) as in *Ceratodon purpureus*, remains to show the struggles of systematists to account for its variations and the imperfections of our text-books in description. You know what Braithwaite says about this species?

"The polymorphous character of this plant may be assumed from its lengthy synonymy, and so endless are the forms that we cannot even define stable varieties. We would advise all commencing bryologists to study every part of this moss well, as its structure once familiarized to the eye will save much after trouble, and the beautiful peristome must attract every microscopist."

Ditrichum tortile (Schrad.) Boeck. is another puzzle (See Paris Index 2: 98) and even at the present time American students are not agreed as to whether we have one species or four, in our collections, bearing this name.

Paris Index shows half a page of synonymy for this species, beginning in 1791, and a critical study of Kindberg's and Limpricht's descriptions of this and other species of the genus *Ditrichum* will show you that confusion still exists, which can only be solved by more and better field study!

The same is true of many other common and variable mosses, such as *Fissidens adiantoides*, *Funaria hygrometrica*, *Physcomitrium turbinatum*, etc. so that any one desiring a chance to experiment need only gather any one of these species, bring them into the house, put them in a covered glass dish, watch them, and keep notes. It is desirable, however, to find out first what you have before any changes take place, because a curious thing happened a few years ago in the laboratory of the New York Botanical Gardens. Dr. Richards and Dr. MacDougal were conducting some physiological experiments in testing the influence of illuminating and other gases upon plants.¹

Some species of mosses were found to be particularly resistant to the influence of Carbon monoxide, and lived and grew in an atmosphere that was sufficient to kill any other plants! But the singular thing that happened was that in a species of *Bryum* the stems grew very tall and slender, the leaves were depauperate and produced in their axils, an abundance of propagating bodies exactly like those of *Pohlia prolifera*; yet as far as we know this species does not occur wild within the limits of the garden, and this peculiar condition may have been due as much to the excess of moisture and close confinement as to the illuminating gas. What the species was before it took on this unusual habit of propagation no one knows, and the leaves were too poorly developed to tell. The plant simply could not achieve its usual reproduction so it accomplished an abnormal propagation.

Now this sort of thing, and others just as interesting, occur continually in nature, with the result that we get new specific and varietal names *ad nauseam*, without any explanations of the conditions. Mr. Williams, who has had a large and varied experience as a student and collector, tells me that in Montana near Great Falls, where he collected mosses for seven years, it frequently happened that a moss would fruit well and abundantly one year, and then not occur again in good condition for two or three years. We know this is true of the paper-white narcissus. Some years it flowers profusely, last spring for example was a wonderful year for bulbs of all kinds, but other years, either due to late frosts, or a dry season, the flowers will be blasted.

1. Richards and McDougal, The Influences of Carbon monoxide and other Gases upon Plants. Bull. Torr. Bot. Club 31: 57, 66 and 167. 1904.

Now this is true of the capsules of mosses. In fact the fecundation of the archegonium and the development of the peristome are entirely dependent on moisture, and if a long dry season occurs before either is accomplished, sterility or abortion takes place.

Now to return to *Ceratodon purpureus*. Those of us who have watched, as I have in the New York Botanical Gardens, know that a long dry summer and fall, such as we have had this year, with snow or rain coming after the nights are cold, will make a difference in the fruiting of this species. None of the lovely wine-red pedicels which give this species its specific name of *purpureus* have thrust up in the hollows of the rocks this year, and in February and March when growth begins again the antheridia and archegonia will probably be too old and dry to do their work.

Two adjectives occur frequently in the vocabulary of a professional bryologist, they are "*old* and *worn*." No one who has not tried to write a satisfactory description from dried plants and gone over all the material available both from America and Europe realizes the difficulty of finding specimens in good condition. In some genera such as *Orthotrichum*, for instance, it is imperative that the *peristome* be in just the right state in order to see the *cilia*. If it is too old they are gone. In other genera like *Grimmia*, it is the *calyptra* or the *annulus*, and we all know that these frequently fall with the lid.

So when "*A Plea for More and Better Local Work*" reaches those whose time and place allow it, I want them to realize that even the commonest species are full of interest and problems unsolved, and that the dreary round of study from dry materials may be greatly helped by a refreshing series of observations from living plants.

New York Botanical Gardens.

AMBLYSTEGIUM HOLZINGERI—A CORRECTION.

A. J. GROUT.

In the November, 1909, BRYOLOGIST I published *Amblystegium Holzingeri* as a new species. Prof. Holzinger called my attention to the fact that this combination had already been used by Renaud and Cardot for *Hypnum Closteri* Austin of which it of course becomes a synonym, as Austin's name has the priority by many years.

This renders it necessary to rename the moss described by me under the name of *Amblystegium Holzingeri*. For it I propose the name **Amblystegium Americanum**, nom. nov.